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APPLICANT : SHIMADZU CORP;

INVENTOR : SHIMIZU KIMIHARU;

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TITLE : NUCLEAR MAGNETIC RESONANCE
TOMOGRAPHIC PHOTOGRAPHY

$$SAR = \frac{6.81 \times 10^{-11} F^2 R^2}{P s t T} \times n$$

ただし、 F は核磁気共鳴周波数

R は被検体の半径

P は組織電気抵抗

s は組織比重

T は励起パルスと同一エネルギー・同一

最大振幅の矩形波の送出時間

$1/t$ は 1 秒間の励起パルス数

n は高周波吸収の周波数依存性を考慮

した補正係数

ABSTRACT : PURPOSE: To obtain a method which is safe to a human body and free from restriction undesired on MRI with a higher calculating accuracy of a specific absorption rate(SAR) by determining radii of interest parts of a subject based on a tomographic image obtained by a short-time nuclear magnetic resonance tomographic photography (MRI) to be put into a specified formula.

CONSTITUTION: In the first treating process, a coarse tomographic image at an interest part of a subject is taken by a short-time spin/echo method. In the second treating process, a circle is drawn with an area the same as that of the coarse tomographic image obtained in the first treating process and a radius of the circle is made as such of the interest part. In the third treating process, the radius of the interest part of the subject obtained in the second treating process is put into a formula to determine $1/t$ (the number of excitation pulses per sec. with an SAR value below a predetermined value. In the fourth treating process, an excitation pulse series (repetition time TR, number of spins/ echoes and number of slices) is set with the number of excitation pulses per sec. obtained in the third process as a limit.

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